

SW

<b>Notice of Allowability</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/669,514	AWDALLA, ESSAM T.	
	<b>Examiner</b>	<b>Art Unit</b>	
	Igor Kershteyn	3745	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--**

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☐ This communication is responsive to \_\_\_\_\_.
2. ☒ The allowed claim(s) is/are 1-6.
3. ☒ The drawings filed on 23 September 2003 are accepted by the Examiner.
4. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
  - a) ☐ All    b) ☐ Some\*    c) ☐ None    of the:
  1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

\* Certified copies not received: \_\_\_\_\_.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

**THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.**

5. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
6. ☐ CORRECTED DRAWINGS ( as "replacement sheets") must be submitted.
  - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review ( PTO-948) attached
    - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date \_\_\_\_\_.
  - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date \_\_\_\_\_.

Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
7. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

**Attachment(s)**

- |  |  |
|--|--|
| 1. <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 5. <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)            |
| 2. <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | 6. <input type="checkbox"/> Interview Summary (PTO-413),<br>Paper No./Mail Date _____. |
| 3. <input checked="" type="checkbox"/> Information Disclosure Statements (PTO-1449 or PTO/SB/08),<br>Paper No./Mail Date <u>09/23/2003</u> | 7. <input type="checkbox"/> Examiner's Amendment/Comment                               |
| 4. <input type="checkbox"/> Examiner's Comment Regarding Requirement for Deposit<br>of Biological Material                                 | 8. <input type="checkbox"/> Examiner's Statement of Reasons for Allowance              |
|  | 9. <input type="checkbox"/> Other _____.   |

***Reasons for allowance***

The following is an examiner's statement of reasons for allowance:

The instant invention is deemed to be directed to an unobvious improvement to a rotary ram-in compressor over PCT Application PCT/US00/17044 which teaches a rotary ram-in compressor comprising: a stationary casing 21 having at least one inlet passage 22 for admission of working gases, and a receiver (not numbered) wherein pressurized gases collect, a drive shaft 26 supported for rotation in a given direction inside the casing 21 by an arrangement of bearings 27; and a rotor assembly comprising a first disk 28 secured for rotation with the drive shaft 26 and lying in a first plane transverse to the rotational axis of the drive shaft 26; a second disk 29 lying in a second plane transverse to the rotational axis of the drive shaft 26, with the inner surfaces 31 of the two disks defining an annular space in-between; and a plurality of vanes 30 arranged circumferentially within said annular space, each vane attached to both disks defining the annular space, each vane has a leading edge 35, a trailing edge 36, a concave surface 37 and a convex surface 38, with the average angles of inclination of the successive portions of the vane 30 with respect to a plane comprising the midpoint of the vane and perpendicular to a radial plane including the rotational axis of the rotor and the midpoint of the vane decreases preferably gradually from its leading edge towards its trailing edge, within a range from about +2 to about -18 degrees, the opposing parts of the surfaces of each two adjacent vanes 30 along with the opposing parts of the two disks surfaces confined between the opposing parts of the surfaces of

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each two adjacent vanes defining a feeding channel 39 between them, each feeding channel 39 has an inlet and an outlet, with means (Shown in figure 15) for active sweeping of the pressurized gases from the compressor's receiver being provided.

Regarding claim 1, the improvement comprises the cross sectional area of the inlet of each of the feeding channels being equal to the cross sectional area of its outlet.

Regarding claim 4, the improvement comprises each of the feeding channels converges from its inlet towards its outlet.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

### ***Prior Art***

Prior art made of record but not relied upon is considered pertinent to Applicant's disclosure and consist of seven patents.

Nishikawa et al. (4,227,868) is cited to show a compressor impeller having a first disk and a second disk and a plurality of vanes arranged therebetween but fails to teach feeding channels with cross-section that is equal or converging from inlet to outlet of the feeding channels.

Erickson (4,278,399) is cited to show a compressor impeller having a first disk and a second disk and a plurality of vanes arranged therebetween but fails to teach

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feeding channels with cross-section that is equal or converging from inlet to outlet of the feeding channels.

Nishikawa et al. (4,358,244) is cited to show a compressor impeller having a first disk and a second disk and a plurality of vanes arranged therebetween but fails to teach feeding channels with cross-section that is equal or converging from inlet to outlet of the feeding channels.

Kim (6,739,835) is cited to show a compressor impeller having a first disk and a second disk and a plurality of vanes arranged therebetween but fails to teach feeding channels with cross-section that is equal or converging from inlet to outlet of the feeding channels.

Japan Patent No. JP354013002A is cited to show a compressor impeller having a first disk and a second disk and a plurality of vanes arranged therebetween but fails to teach feeding channels with cross-section that is equal or converging from inlet to outlet of the feeding channels.

Japan Patent No. JP35508794A is cited to show a compressor impeller having a first disk and a second disk and a plurality of vanes arranged therebetween but fails to teach feeding channels with cross-section that is equal or converging from inlet to outlet of the feeding channels.

German Patent No. DE3243169A1 is cited to show a compressor impeller having a first disk and a second disk and a plurality of vanes arranged therebetween but fails to teach feeding channels with cross-section that is equal or converging from inlet to outlet of the feeding channels.

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**Contact information**

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Examiner Kershteyn whose telephone number is **(571)272-4817**. The examiner can be reached on Monday-Friday from 8:00 a.m. to 4:30 p.m.


If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Edward Look, can be reached on **(571)272-4820**. The fax number is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (703) 308 0861.

IK  
December 15, 2004



Igor Kershteyn  
Patent examiner.  
Art Unit 3745



EDWARD K. LOOK  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 3700  
12/20/04